This application has been carefully reviewed in light of the Office Action dated April 15, 2008. Claims 1, 3 to 6, 8, 9 and 12 are in the application, of which Claims 1, 8 and 9 are the independent claims. Claims 2, 7, 10 and 11 have been canceled without prejudice or disclaimer of subject matter, and without conceding the correctness of the rejections applied against them. Reconsideration and further examination are respectfully requested.

Claims 1 to 10 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 7,162,549 (Mambakkam). Claim 11 was rejected under 35 U.S.C. § 103(a) over Mambakkam in view of U.S. Publication No. 2002/0073271 (Yasugi). Reconsideration and withdrawal of the rejections are respectfully requested.

Claims 1 and 8

The invention of Claims 1 and 8 generally concerns controlling inputs and outputs to and from a plurality of types of storage media. Detection terminals detect a state of connection of each storage medium, and input/output terminals input and output data to and from a connected storage medium. Interface controllers control interfaces to respective ones of the storage media.

According to one aspect of the invention, buffers are connected to the input/output terminals and hold output data or bi-directional data, and the number of buffers is controllably settable.

According to another aspect of the invention, control means select one interface controller for connecting to the buffers and set the number of buffers, and the selecting and setting are based on signals from the detection terminals.

For example, in one sample embodiment shown in Figure 1, selectors select one interface controller from among several interface controllers based on a detected card, thus allowing the different cards to share buffers such as 3-state buffer 111.

By virtue of this arrangement, it is ordinarily possible to reduce or limit the number of buffers and terminals required to control access to the different types of storage media, thus reducing the required size and cost of the circuit.

Referring specifically to claim language, independent Claim 1 is directed to a storage media control circuit for controlling inputs and outputs to and from a plurality of types of storage media of different shapes and specifications. The circuit includes detection terminals for detecting a state of connection of respective ones of the storage media of the plurality of types. The circuit also includes input/output terminals for inputting and outputting bi-directional input/output data to and from a storage medium whose connection has been detected by the detection terminals. In addition, the circuit includes buffers connected to the input/output terminals and holding at least one of output data and bi-directional input/output data, wherein the number of output signal buffers for holding output data and the number of input/output signal buffers for holding bi-directional input/output data is controllably settable. The circuit further includes interface controllers for controlling interface to respective ones of the storage media of the plurality of types. Additionally, the circuit includes control means between the interface controllers and the buffers, for selecting one interface controller from among the interface controllers and connecting the selected interface controller to the buffers, and for setting the number of output signal buffers and the number of input/output signal buffers, wherein the selecting and the setting are based on signals from the detection terminals.

Independent Claim 8 is directed to a printing apparatus substantially in accordance with the circuit of Claim 1.

The applied art is not seen to disclose or suggest the features of Claims 1 and 8, and in particular is not seen to disclose or suggest at least the features of (i) controllably setting a number of buffers based on signals from storage media detection terminals, and (ii) selecting one interface controller from interface controllers for a plurality of types of storage media, based on signals from storage media detection terminals.

As understood by Applicant, Mambakkam is directed to a controller chip for coupling a computer system with a flash storage system. An interface mechanism determines whether the flash storage system includes an adapter for providing the appropriate interface to the computer system. See Mambakkam, Abstract.

In connection with its rejection of now-cancelled Claim 9, page 7 of the Office Action asserts that Mambakkam (Figure 10, Column 12, lines 14 to 26 and Column 13, lines 29 to 38) discloses generating signals to copy information to mass storage, and buffers for buffering data.

However, simply generating signals to copy information to buffers is not seen to correspond to controllably setting a number of buffers based on signals from storage media detection terminals.

Mambakkam is also not seen to disclose or suggest selecting one interface controller from interface controllers for a plurality of types of storage media, based on signals from storage media detection terminals.

In connection with its rejection of now-cancelled Claim 2, page 5 of the Office Action asserts that Mambakkam (Column 13, lines 1 to 9) discloses a selector for selecting an interface controller to be connected to the input/output terminals, based on signals from the detection terminals.

However, the cited portions of Mambakkam simply describe I/O ports or registers that drive I/O pins of a converter chip. See Mambakkam, Column 13, lines 1 to 9. More specifically, Mambakkma simply discloses passive adapters that connect pins from smaller flash memory cards to a 50-pin CompactFlash connector. See Mambakkam, Figures 3A and 3B and Figure 5, Column 7, lines 50 to 60 and Column 8, line 57 to Column 9, line 59. Thus, as understood by Applicant, Mambakkam provides all required terminals for every interface controller for each possible type of card, rather than limiting the number of terminals or buffers by selecting one interface controller.

Accordingly, Mambakkam is not seen to disclose or suggest at least the features of (i) controllably setting a number of buffers based on signals from storage media detection terminals, and (ii) selecting one interface controller from interface controllers for a plurality of types of storage media, based on signals from storage media detection terminals.

Yasugi has been reviewed and is not seen to remedy the above-noted deficiencies of Mambakkam.

Therefore, independent Claims 1 and 8 are believed to be in condition for allowance, and such action is respectfully requested.

Claim 9

Claim 9 was rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 7,162,549 (Mambakkam). This rejection is traversed, as discussed more fully below.

Independent Claim 9 is directed to a storage media control circuit for controlling inputs to and outputs from a plurality of types of storage media of different shapes and specifications. The circuit includes detection means for detecting the type of a storage medium that undergoes input/output of data, and buffers for holding bi-directional data with regard to this storage medium. The circuit also includes first control means, which correspond to respective ones of the plurality of storage media, for performing control for accessing the storage media. The circuit also includes selection means for for selecting the buffers. The circuit further includes second control means for controlling selection of the first control means and the selection means in accordance with result of detection by the detection means.

The applied art is not seen to disclose or suggest the features of Claim 9, and in particular is not seen to disclose or suggest at least the features of (i) selecting buffers for holding bi-directional data with regard to a detected storage medium, and (ii) controlling selection of control means for accessing a plurality of types of media.

In particular, as discussed above, the applied art is not seen to disclose or suggest at least the features of (i) controllably setting a number of buffers based on signals from storage media detection terminals, and (ii) selecting one interface controller from interface controllers for a plurality of types of storage media, based on signals from storage media detection terminals. Applicant respectfully submits that the applied art also can not disclose or suggest (i) selecting buffers for holding bi-directional data with regard to a

detected storage medium, and (ii) controlling selection of control means for accessing a plurality of types of media.

Therefore, independent Claim 9 is believed to be in condition for allowance, and such action is respectfully requested.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

Turning to a formal matter, the Office Action included copies of the Information Disclosure Statements dated October 25, 2004 and May 23, 2006. While the Information Disclosure Statements have been initialed, each document on the corresponding Form PTO-1449s has not been initialed. Nevertheless, it is Applicant's understanding that this art has been considered and will be printed on the face of the patent. See MPEP § 609.05(b). Accordingly, if Applicant's understanding is not correct, it is respectfully requested that the status be clarified in the next Office communication.

No other matters being raised, the entire application is believed to be in condition for allowance, and such action is courteously solicited.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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